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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,577	01/24/2002	Naohiro Hirose	KON-1707	5337

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,577

Applicant(s)

HIROSE ET AL.

Examiner

Christopher RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/10/05 & 11/21/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 2-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 2-5 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected processes, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 28 August 2003. The basis for the restrictions presented in the Office action of 29 January 2003 remains applicable to the claims.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Nozawa *et al.* in US Patent 6,555,281.

Nozawa discloses in Example 70 a toner having a binder resin and a colorant with SF-1 of 162 and SF-2 of 138. The ratio of SF-1/SF-2 is 1.17. This example has 8.2 number % of particles with a size of 4 microns or less and an average size of 7.1 microns (Table 18 relying on Table 13). Also note Example 71. This toner has a binder resin and a colorant with SF-1 of 172 and SF-2 of 146. The ratio of SF-1/SF-2 is 1.18. This example has 8.0 number % of particles with a size of 4 microns or less and an average size of 7.0 microns. Based on the small number of particles having a size of 4 microns or less and the average particle sizes it appears that the reference inherently has less than 5 % by number of particles with a size of 0.60 to 1.00 microns according to the method of determination required by the claims. Further, the reference specifically discloses as small as 3 % number of particles having a size of 4 microns or smaller.

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(col. 11, l. 9-30). This value would by necessity produce less than 5 % by number of particles with a size of 0.60 to 1.00 microns according to the method of determination required by the claims.

Applicants have submitted evidence to show that previously applied Example 34 does not have the claimed number of particles of from not less than 0.60 μm to less than 1.00 μm . However, given the evidence which shows that number of particles in the noted size range of Example 34 are extremely close to the number claimed, the above noted examples must be similarly evaluated.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa *et al.* in US Patent 6,555,281 in view of Rimai *et al.* in US Patent 4,737,433.

Nozawa discloses a toner having a weight-average particle size of 4 to 8 microns (col. 11, l. 9-12) with a SF-1 of 100 to 170 and SF-2 of 100 to 140 (col. 14, l. 4-14). Examples 34, 70, and 71 discloses specific ratios of SF-1 and SF-2 that are found to be effective in these toners. In the event Nozawa's toners of Examples 70 and 71 do not inherently disclose the claimed number of particles with a size of 0.60 to 1.00 microns, the Examiner relies on Rimai. This reference teaches that the toner should have an average radius (i.e., $\frac{1}{2}$ particle diameter) of less than 5 μm with 99 % of the particles having a radius of 0.5 to 2 times the average radius (Abstract). Controlling the number of particles in this manner permits the artisan to obtain maximum image clarity (col. 2, l. 7-11). As noted in the reference, the resolution of the image is

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limited by the toner particle size (col. 1, l. 61-67). As particle size decreases, efficiency of transfer decreases and toner remains on the photoreceptor. This would appear to cause fog on subsequent images. For the toner disclosed in Nozawa having an average particle diameter of about 7 μm , the radius would be 3.5 μm and 99 % of the particles would have a radius between 1.75 μm and 7 μm (diameter of 3 to 14 μm). Following these teachings the artisan would produce a toner with the claimed number of particles with a size of 0.60 to 1.00 microns.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner of Nozawa with 99 % of the particles having a radius of 0.5 to 2 times the average radius because Rimai teaches that producing a toner with such a particle size distribution gives good image resolution and reduces the amount of toner on the photoreceptor. This would be of advantage in Nozawa, which is specifically concerned with toner remaining on the surface of the image-bearing member (see Nozawa col. 2, l. 27-31; col. 6, l. 54-65). This residual toner remaining on the image bearing member causes fogging.

The recently submitted Rule 132 declarations have been considered but is not deemed persuasive to overcome this rejection because the decrease in fog and half tone unevenness is suggested by Riami for a toner having reduced numbers of small particles. Specifically, the reduced amount of residual toner on the photoreceptor would also reduce fog. Similarly, the low granularity of the toners with the size characteristics in Rimai would result in reduced half toner unevenness because the images would be of higher resolution (see Rimai col. 2, l. 49-54).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nozawa *et al.* in US Patent 6,555,281 in view of Yachi *et al.* in US Patent 5,773,185.

In addition to the discussion above for Nozawa, this document also discloses introducing a wax into the toner to aid in offset characteristics (col. 12, l. 14-32). Nozaa does not disclose

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the specific compound of claim 9, but Yachi teaches the use of ester waxes as effective offset preventing agents (see Formula (1) in col. 9). Also as noted above, Yachi teaches that the addition of a dispersant in a suspension polymerization process, such as calcium phosphate, would be expected to give a suspension resulting in toner with a sharp particle size distribution (see Yachi col. 14, l. 42-49; col. 15, l. 17-50). Yachi specifically teaches as effective a process where the inorganic dispersant is formed in the reaction medium (col. 15, l. 37-42). This process is used by Hashimoto in Example 17.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an ester wax of the Formula (1) in the invention of NOZAWA because Nozawa teaches that waxes are effective offset preventing agents and Yachi discloses a specific wax that is shown to be effective as an offset preventing agent for use in a similar toner production process

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
20 December 2005



CHRISTOPHER RODEE
PRIMARY EXAMINER